



## SEQUENCE LISTING

<110> Max-Planck-Gesellschaft zur Förderung der Wissenschaften  
e.V.

<120> Cell line comprising vector encoding truncated FLK-1 receptor  
Div. of US 09/766 678 (Pat. No. 6 872 699)

<130> 44995P US

<140> US 10/799,782

<141> 2009-06-05

<160> 11

<170> PatentIn version 3.3

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<212> DNA

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Gln Lys Asp Ile Leu Thr Ile Leu Ala Asn Thr Thr Leu Gln Ile Thr  
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Leu Gln Ile Thr Cys Arg Gly Gln Arg Asp Leu Asp Trp Leu Trp Pro  
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Ala Ser Thr Val Tyr Val Tyr Val Arg Asp Tyr Arg Ser Pro Phe Ile  
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Gly	Glu	Tyr	Thr	Cys	Val	Ala	Ser	Ser	Gly	Arg	Met	Ile	Lys	Arg	Asn
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Arg	Thr	Phe	Val	Arg	Val	His	Thr	Lys	Pro	Phe	Ile	Ala	Phe	Gly	Ser
				325					330					335	
Gly	Met	Lys	Ser	Leu	Val	Glu	Ala	Thr	Val	Gly	Ser	Gln	Val	Arg	Ile
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Pro	Val	Lys	Tyr	Leu	Ser	Tyr	Pro	Ala	Pro	Asp	Ile	Lys	Trp	Tyr	Arg
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Asn	Gly	Arg	Pro	Ile	Glu	Ser	Asn	Tyr	Thr	Met	Ile	Val	Gly	Asp	Glu
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Leu	Thr	Ile	Met	Glu	Val	Thr	Glu	Arg	Asp	Ala	Gly	Asn	Tyr	Thr	Val
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Ile	Leu	Thr	Asn	Pro	Ile	Ser	Met	Glu	Lys	Gln	Ser	His	Met	Val	Ser
				405					410					415	
Leu	Val	Val	Asn	Val	Pro	Pro	Gln	Ile	Gly	Glu	Lys	Ala	Leu	Ile	Ser
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Pro	Met	Asp	Ser	Tyr	Gln	Tyr	Gly	Thr	Met	Gln	Thr	Leu	Thr	Cys	Thr
		435					440					445			
Val	Tyr	Ala	Asn	Pro	Pro	Leu	His	His	Ile	Gln	Trp	Tyr	Trp	Gln	Leu
	450					455					460				



Glu Glu Ala Cys Ser Tyr Arg Pro Gly Gln Thr Ser Pro Tyr Ala Cys  
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Lys Glu Trp Arg His Val Glu Asp Phe Gln Gly Gly Asn Lys Ile Glu  
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Val Thr Lys Asn Gln Tyr Ala Leu Ile Glu Gly Lys Asn Lys Thr Val  
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Ser Thr Leu Val Ile Gln Ala Ala Asn Val Ser Ala Leu Tyr Lys Cys  
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Glu Ala Ile Asn Lys Ala Gly Arg Gly Glu Arg Val Ile Ser Phe His  
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Val Ile Arg Gly Pro Glu Ile Thr Val Gln Pro Ala Ala Gln Pro Thr  
 545 550 555 560

Glu Gln Glu Ser Val Ser Leu Leu Cys Thr Ala Asp Arg Asn Thr Phe  
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Glu Asn Leu Thr Trp Tyr Lys Leu Gly Ser Gln Ala Thr Ser Val His  
 580 585 590

Met Gly Glu Ser Leu Thr Pro Val Cys Lys Asn Leu Asp Ala Leu Trp  
 595 600 605

Lys Leu Asn Gly Thr Met Phe Ser Asn Ser Thr Asn Asp Ile Leu Ile  
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Val Ala Phe Gln Asn Ala Ser Leu Gln Asp Gln Gly Asp Tyr Val Cys  
 625 630 635 640

Ser Ala Gln Asp Lys Lys Thr Lys Lys Arg His Cys Leu Val Lys Gln  
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Leu Ile Ile Leu Glu Arg Met Ala Pro Met Ile Thr Gly Asn Leu Glu  
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Asn Gln Thr Thr Thr Ile Gly Glu Thr Ile Glu Val Thr Cys Pro Ala  
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Ser Gly Asn Pro Thr Pro His Ile Thr Trp Phe Lys Asp Asn Glu Thr  
 690 695 700

Leu Val Glu Asp Ser Gly Ile Val Leu Arg Asp Gly Asn Arg Asn Leu  
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Thr Ile Arg Arg Val Arg Lys Glu Asp Gly Gly Leu Tyr Thr Cys Gln  
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Ala Cys Asn Val Leu Gly Cys Ala Arg Ala Glu Thr Leu Phe Ile Ile  
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Glu Gly Ala Gln Glu Lys Thr Asn Leu Glu Val Ile Ile Leu Val Gly  
 755 760 765

Thr Ala Val Ile Ala Met Phe Phe Trp Leu Leu Leu Val Ile Val Leu  
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Arg Thr Val Lys Arg Ala Asn Glu Gly Glu Leu Lys Thr Gly Tyr Leu  
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Ser Ile Val Met Asp Pro Asp Glu Leu Pro Leu Asp Glu Arg Cys Glu  
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Arg Leu Pro Tyr Asp Ala Ser Lys Trp Glu Phe Pro Arg Asp Arg Leu  
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Lys Leu Gly Lys Pro Leu Gly Arg Gly Ala Phe Gly Gln Val Ile Glu  
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Ala Asp Ala Phe Gly Ile Asp Lys Thr Ala Thr Cys Lys Thr Val Ala  
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Met Ser Glu Leu Lys Ile Leu Ile His Ile Gly His His Leu Asn Val  
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Val Asn Leu Leu Gly Ala Cys Thr Lys Pro Gly Gly Pro Leu Met Val  
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Lys Arg Asn Glu Phe Val Pro Tyr Lys Ser Lys Gly Ala Arg Phe Arg  
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Gln Gly Lys Asp Tyr Val Gly Glu Leu Ser Val Asp Leu Lys Arg Arg  
 945 950 955 960

Leu Asp Ser Ile Thr Ser Ser Gln Ser Ser Ala Ser Ser Gly Phe Val  
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Glu Glu Lys Ser Leu Ser Asp Val Glu Glu Glu Glu Ala Ser Glu Glu  
 980 985 990

Leu Tyr Lys Asp Phe Leu Thr Leu Glu His Leu Ile Cys Tyr Ser Phe  
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His	Arg	Asp	Leu	Ala	Ala	Arg	Asn	Ile	Leu	Leu	Ser	Glu	Lys	Asn
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Val	Val	Lys	Ile	Cys	Asp	Phe	Gly	Leu	Ala	Arg	Asp	Ile	Tyr	Lys
	1040					1045					1050			
Asp	Pro	Asp	Tyr	Val	Arg	Lys	Gly	Asp	Ala	Arg	Leu	Pro	Leu	Lys
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Trp	Met	Ala	Pro	Glu	Thr	Ile	Phe	Asp	Arg	Val	Tyr	Thr	Ile	Gln
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Ser	Asp	Val	Trp	Ser	Phe	Gly	Val	Leu	Leu	Trp	Glu	Ile	Phe	Ser
	1085					1090					1095			
Leu	Gly	Ala	Ser	Pro	Tyr	Pro	Gly	Val	Lys	Ile	Asp	Glu	Glu	Phe
	1100					1105					1110			
Cys	Arg	Arg	Leu	Lys	Glu	Gly	Thr	Arg	Met	Arg	Ala	Pro	Asp	Tyr
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Thr	Thr	Pro	Glu	Met	Tyr	Gln	Thr	Met	Leu	Asp	Cys	Trp	His	Glu
	1130					1135					1140			
Asp	Pro	Asn	Gln	Arg	Pro	Ser	Phe	Ser	Glu	Leu	Val	Glu	His	Leu
	1145					1150					1155			
Gly	Asn	Leu	Leu	Gln	Ala	Asn	Ala	Gln	Gln	Asp	Gly	Lys	Asp	Tyr
	1160					1165					1170			
Ile	Val	Leu	Pro	Met	Ser	Glu	Thr	Leu	Ser	Met	Glu	Glu	Asp	Ser
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Gly	Leu	Ser	Leu	Pro	Thr	Ser	Pro	Val	Ser	Cys	Met	Glu	Glu	Glu
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Glu	Val	Cys	Asp	Pro	Lys	Phe	His	Tyr	Asp	Asn	Thr	Ala	Gly	Ile
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Ser	His	Tyr	Leu	Gln	Asn	Ser	Lys	Arg	Lys	Ser	Arg	Pro	Val	Ser
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Val	Lys	Thr	Phe	Glu	Asp	Ile	Pro	Leu	Glu	Glu	Pro	Glu	Val	Lys
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Val	Ile	Pro	Asp	Asp	Ser	Gln	Thr	Asp	Ser	Gly	Met	Val	Leu	Ala
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Ser Phe Gly Gly Met Met Pro Ser Lys Ser Arg Glu Ser Val Ala				
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Ser Glu Gly Ser Asn Gln Thr Ser Gly Tyr Gln Ser Gly Tyr His				
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Ser Asp Asp Thr Asp Thr Thr Val Tyr Ser Ser Asp Glu Ala Gly				
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Leu Leu Lys Met Val Asp Ala Ala Val His Ala Asp Ser Gly Thr				
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Thr Leu Gln Leu Thr Ser Cys Leu Asn Gly Ser Gly Pro Val Pro				
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 Gly Gly Asp Ser Ile Phe Cys Lys Thr Leu Thr Ile Pro Arg Val Val  
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 Gly Asn Asp Thr Gly Ala Tyr Lys Cys Ser Tyr Arg Asp Val Asp Ile  
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 Ala Ser Thr Val Tyr Val Tyr Val Arg Asp Tyr Arg Ser Pro Phe Ile  
 115 120 125  
 Ala Ser Val Ser Asp Gln His Gly Ile Val Tyr Ile Thr Glu Asn Lys  
 130 135 140  
 Asn Lys Thr Val Val Ile Pro Cys Arg Gly Ser Ile Ser Asn Leu Asn  
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 Val Ser Leu Cys Ala Arg Tyr Pro Glu Lys Arg Phe Val Pro Asp Gly  
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 Met Ile Ser Tyr Ala Gly Met Val Phe Cys Glu Ala Lys Ile Asn Asp  
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 Glu Thr Tyr Gln Ser Ile Met Tyr Ile Val Val Val Val Gly Tyr Arg  
 210 215 220  
 Ile Tyr Asp Val Ile Leu Ser Pro Pro His Glu Ile Glu Leu Ser Ala  
 225 230 235 240  
 Gly Glu Lys Leu Val Leu Asn Cys Thr Ala Arg Thr Glu Leu Asn Val  
 245 250 255  
 Gly Leu Asp Phe Thr Trp His Ser Pro Pro Ser Lys Ser His His Lys  
 260 265 270  
 Lys Ile Val Asn Arg Asp Val Lys Pro Phe Pro Gly Thr Val Ala Lys  
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 Gly Glu Tyr Thr Cys Val Ala Ser Ser Gly Arg Met Ile Lys Arg Asn

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 Gly Met Lys Ser Leu Val Glu Ala Thr Val Gly Ser Gln Val Arg Ile  
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 Pro Val Lys Tyr Leu Ser Tyr Pro Ala Pro Asp Ile Lys Trp Tyr Arg  
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 Leu Thr Ile Met Glu Val Thr Glu Arg Asp Ala Gly Asn Tyr Thr Val  
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 Pro Met Asp Ser Tyr Gln Tyr Gly Thr Met Gln Thr Leu Thr Cys Thr  
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 Val Tyr Ala Asn Pro Pro Leu His His Ile Gln Trp Tyr Trp Gln Leu  
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 Glu Glu Ala Cys Ser Tyr Arg Pro Gly Gln Thr Ser Pro Tyr Ala Cys  
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 Lys Glu Trp Arg His Val Glu Asp Phe Gln Gly Gly Asn Lys Ile Glu  
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 Val Thr Lys Asn Gln Tyr Ala Leu Ile Glu Gly Lys Asn Lys Thr Val  
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 Ser Thr Leu Val Ile Gln Ala Ala Asn Val Ser Ala Leu Tyr Lys Cys  
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 Val Ile Arg Gly Pro Glu Ile Thr Val Gln Pro Ala Ala Gln Pro Thr  
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 Glu Gln Glu Ser Val Ser Leu Leu Cys Thr Ala Asp Arg Asn Thr Phe  
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 Glu Asn Leu Thr Trp Tyr Lys Leu Gly Ser Gln Ala Thr Ser Val His  
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Met Gly Glu Ser Leu Thr Pro Val Cys Lys Asn Leu Asp Ala Leu Trp  
595 600 605

Lys Leu Asn Gly Thr Met Phe Ser Asn Ser Thr Asn Asp Ile Leu Ile  
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Val Ala Phe Gln Asn Ala Ser Leu Gln Asp Gln Gly Asp Tyr Val Cys  
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Ser Ala Gln Asp Lys Lys Thr Lys Lys Arg His Cys Leu Val Lys Gln  
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Leu Ile Ile Leu Glu Arg Met Ala Pro Met Ile Thr Gly Asn Leu Glu  
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Asn Gln Thr Thr Thr Ile Gly Glu Thr Ile Glu Val Thr Cys Pro Ala  
675 680 685

Ser Gly Asn Pro Thr Pro His Ile Thr Trp Phe Lys Asp Asn Glu Thr  
690 695 700

Leu Val Glu Asp Ser Gly Ile Val Leu Arg Asp Gly Asn Arg Asn Leu  
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Thr Ile Arg Arg Val Arg Lys Glu Asp Gly Gly Leu Tyr Thr Cys Gln  
725 730 735

Ala Cys Asn Val Leu Gly Cys Ala Arg Ala Glu Thr Leu Phe Ile Ile  
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Glu Gly Ala Gln Glu Lys Thr Asn Leu Glu Val Ile Ile Leu Val Gly  
755 760 765

Thr Ala Val Ile Ala Met Phe Phe Trp Leu Leu Leu Val Ile Val Leu  
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Lys Phe Gly	Asn Leu Ser Thr Tyr	Leu Arg Gly Lys Arg	Asn Glu Phe
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Val Pro Tyr	Lys Ser Lys Gly Ala Arg	Phe Arg Gln Gly	Lys Asp Tyr
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Val Gly Glu	Leu Ser Val Asp Leu Lys	Arg Arg Leu Asp	Ser Ile Thr
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Ser Ser Gln	Ser Ser Ala Ser Ser	Gly Phe Val Glu	Glu Lys Ser Leu
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Ser Asp Val	Glu Glu Glu Glu Ala Ser	Glu Glu Leu Tyr	Lys Asp Phe
	100	105	110
Leu Thr Leu	Glu His Leu Ile Cys Tyr	Ser Phe Gln Val	Ala Lys Gly
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Met Glu Phe	Leu Ala Ser Arg Lys Cys	Ile His Arg Asp	Leu Ala Ala
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Arg Asn Ile	Leu Leu Ser Glu Lys Asn	Val Val Lys Ile	Cys Asp Phe
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Met Glu Ser Lys Ala Leu Leu Ala	



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Val	Ala	Leu	Trp	Phe	Cys	Val	Glu	Thr	Arg	Ala	Ala	Ser	Val	Gly	Leu	
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cgg	gac	ctg	gac	tgg	ctt	tgg	ccc	aat	gct	cag	cgt	gat	tct	gag	gaa	425
Arg	Asp	Leu	Asp	Trp	Leu	Trp	Pro	Asn	Ala	Gln	Arg	Asp	Ser	Glu	Glu	
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Arg	Val	Leu	Val	Thr	Glu	Cys	Gly	Gly	Gly	Asp	Ser	Ile	Phe	Cys	Lys	
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Thr	Leu	Thr	Ile	Pro	Arg	Val	Val	Gly	Asn	Asp	Thr	Gly	Ala	Tyr	Lys	
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Cys	Ser	Tyr	Arg	Asp	Val	Asp	Ile	Ala	Ser	Thr	Val	Tyr	Val	Tyr	Val	
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Ile	Val	Tyr	Ile	Thr	Glu	Asn	Lys	Asn	Lys	Thr	Val	Val	Ile	Pro	Cys	
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Ile	Gly	Phe	Thr	Leu	Pro	Ser	Tyr	Met	Ile	Ser	Tyr	Ala	Gly	Met	Val	
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Phe	Cys	Glu	Ala	Lys	Ile	Asn	Asp	Glu	Thr	Tyr	Gln	Ser	Ile	Met	Tyr	
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Pro	His	Glu	Ile	Glu	Leu	Ser	Ala	Gly	Glu	Lys	Leu	Val	Leu	Asn	Cys	
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Pro	Pro	Ser	Lys	Ser	His	His	Lys	Lys	Ile	Val	Asn	Arg	Asp	Val	Lys	
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Glu Lys Gln Ser His Met Val Ser Leu Val Val Asn Val Pro Pro Gln	
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445 450 455	
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Gly Gln Thr Ser Pro Tyr Ala Cys Lys Glu Trp Arg His Val Glu Asp	
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Gly Glu Arg Val Ile Ser Phe His Val Ile Arg Gly Pro Glu Ile Thr	
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Val	Gln	Pro	Ala	Ala	Gln	Pro	Thr	Glu	Gln	Glu	Ser	Val	Ser	Leu	Leu	
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tgc	act	gca	gac	aga	aat	acg	ttt	gag	aac	ctc	acg	tgg	tac	aag	ctt	1961
Cys	Thr	Ala	Asp	Arg	Asn	Thr	Phe	Glu	Asn	Leu	Thr	Trp	Tyr	Lys	Leu	
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ggc	tca	cag	gca	aca	tcg	gtc	cac	atg	ggc	gaa	tca	ctc	aca	cca	gtt	2009
Gly	Ser	Gln	Ala	Thr	Ser	Val	His	Met	Gly	Glu	Ser	Leu	Thr	Pro	Val	
585					590				595						600	
tgc	aag	aac	ttg	gat	gct	ctt	tgg	aaa	ctg	aat	ggc	acc	atg	ttt	tct	2057
Cys	Lys	Asn	Leu	Asp	Ala	Leu	Trp	Lys	Leu	Asn	Gly	Thr	Met	Phe	Ser	
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aac	agc	aca	aat	gac	atc	ttg	att	gtg	gca	ttt	cag	aat	gcc	tct	ctg	2105
Asn	Ser	Thr	Asn	Asp	Ile	Leu	Ile	Val	Ala	Phe	Gln	Asn	Ala	Ser	Leu	
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cag	gac	caa	ggc	gac	tat	gtt	tgc	tct	gct	caa	gat	aag	aag	acc	aag	2153
Gln	Asp	Gln	Gly	Asp	Tyr	Val	Cys	Ser	Ala	Gln	Asp	Lys	Lys	Thr	Lys	
		635					640					645				
aaa	aga	cat	tgc	ctg	gtc	aaa	cag	ctc	atc	atc	cta	gag	cgc	atg	gca	2201
Lys	Arg	His	Cys	Leu	Val	Lys	Gln	Leu	Ile	Ile	Leu	Glu	Arg	Met	Ala	
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ccc	atg	atc	acc	gga	aat	ctg	gag	aat	cag	aca	aca	acc	att	ggc	gag	2249
Pro	Met	Ile	Thr	Gly	Asn	Leu	Glu	Asn	Gln	Thr	Thr	Thr	Ile	Gly	Glu	
665					670				675						680	
acc	att	gaa	gtg	act	tgc	cca	gca	tct	gga	aat	cct	acc	cca	cac	att	2297
Thr	Ile	Glu	Val	Thr	Cys	Pro	Ala	Ser	Gly	Asn	Pro	Thr	Pro	His	Ile	
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aca	tgg	ttc	aaa	gac	aac	gag	acc	ctg	gta	gaa	gat	tca	ggc	att	gta	2345
Thr	Trp	Phe	Lys	Asp	Asn	Glu	Thr	Leu	Val	Glu	Asp	Ser	Gly	Ile	Val	
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Leu	Arg	Asp	Gly	Asn	Arg	Asn	Leu	Thr	Ile	Arg	Arg	Val	Arg	Lys	Glu	
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gat	gga	ggc	ctc	tac	acc	tgc	cag	gcc	tgc	aat	gtc	ctt	ggc	tgt	gca	2441
Asp	Gly	Gly	Leu	Tyr	Thr	Cys	Gln	Ala	Cys	Asn	Val	Leu	Gly	Cys	Ala	
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aga	gcg	gag	acg	ctc	ttc	ata	ata	gaa	ggc	gcc	cag	gaa	aag	acc	aac	2489
Arg	Ala	Glu	Thr	Leu	Phe	Ile	Ile	Glu	Gly	Ala	Gln	Glu	Lys	Thr	Asn	
745					750				755						760	
ttg	gaa	gtc	att	atc	ctc	gtc	ggc	act	gca	gtg	att	gcc	atg	ttc	ttc	2537
Leu	Glu	Val	Ile	Ile	Leu	Val	Gly	Thr	Ala	Val	Ile	Ala	Met	Phe	Phe	
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tgg	ctc	ctt	ctt	gtc	att	gtc	cta	cgg	acc	gtt	aag	cgg	gcc	aat	gaa	2585
Trp	Leu	Leu	Leu	Val	Ile	Val	Leu	Arg	Thr	Val	Lys	Arg	Ala	Asn	Glu	
			780					785					790			
ggg	gaa	ctg	aag	aca	ggc	tac	ttg	tct	att	gtc	atg	gat	cca	gat	gaa	2633
Gly	Glu	Leu	Lys	Thr	Gly	Tyr	Leu	Ser	Ile	Val	Met	Asp	Pro	Asp	Glu	
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Leu	Pro	Leu	Asp	Glu	Arg	Cys	Glu	Arg	Leu	Pro	Tyr	Asp	Ala	Ser	Lys	
	810					815					820					
tgg	gaa	ttc	ccc	agg	gac	cgg	ctg	aaa	cta	gga	aaa	cct	ctt	ggc	cgc	2729

Trp	Glu	Phe	Pro	Arg	Asp	Arg	Leu	Lys	Leu	Gly	Lys	Pro	Leu	Gly	Arg		
825					830					835					840		
ggt	gcc	ttc	ggc	caa	gtg	att	gag	gca	gac	gct	ttt	gga	att	gac	aag	2777	
Gly	Ala	Phe	Gly	Gln	Val	Ile	Glu	Ala	Asp	Ala	Phe	Gly	Ile	Asp	Lys		
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Thr	Ala	Thr	Cys	Lys	Thr	Val	Ala	Val	Lys	Met	Leu	Lys	Glu	Gly	Ala		
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aca	cac	agc	gag	cat	cga	gcc	ctc	atg	tct	gaa	ctc	aag	atc	ctc	atc	2873	
Thr	His	Ser	Glu	His	Arg	Ala	Leu	Met	Ser	Glu	Leu	Lys	Ile	Leu	Ile		
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cac	att	ggt	cac	cat	ctc	aat	gtg	gtg	aac	ctc	cta	ggc	gcc	tgc	acc	2921	
His	Ile	Gly	His	His	Leu	Asn	Val	Val	Asn	Leu	Gly	Ala	Cys	Thr			
	890					895					900						
aag	ccg	gga	ggg	cct	ctc	atg	gtg	att	ctg	caa	ttc	tcg	aag	ttt	gga	2969	
Lys	Pro	Gly	Gly	Pro	Leu	Met	Val	Ile	Leu	Gln	Phe	Ser	Lys	Phe	Gly		
905					910					915				920			
aac	cta	tca	act	tac	tta	cgg	ggc	aag	aga	aat	gaa	ttt	gtt	ccc	tat	3017	
Asn	Leu	Ser	Thr	Tyr	Leu	Arg	Gly	Lys	Arg	Asn	Glu	Phe	Val	Pro	Tyr		
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aag	agc	aaa	ggg	gca	cgc	ttc	cgc	cag	ggc	aag	gac	tac	gtt	ggg	gag	3065	
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Leu	Ser	Val	Asp	Leu	Lys	Arg	Arg	Leu	Asp	Ser	Ile	Thr	Ser	Ser	Gln		
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agc	tct	gcc	agc	tca	ggc	ttt	gtt	gag	gag	aaa	tcg	ctc	agt	gat	gta	3161	
Ser	Ser	Ala	Ser	Ser	Gly	Phe	Val	Glu	Glu	Lys	Ser	Leu	Ser	Asp	Val		
	970					975					980						
gag	gaa	gaa	gaa	gct	tct	gaa	gaa	ctg	tac	aag	gac	ttc	ctg	acc	ttg	3209	
Glu	Glu	Glu	Glu	Ala	Ser	Glu	Glu	Leu	Tyr	Lys	Asp	Phe	Leu	Thr	Leu		
985					990					995					1000		
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Glu	His	Leu	Ile	Cys	Tyr	Ser	Phe	Gln	Val	Ala	Lys	Gly	Met	Glu			
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Phe	Leu	Ala	Ser	Arg	Lys	Cys	Ile	His	Arg	Asp	Leu	Ala	Ala	Arg			
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aac	att	ctc	cta	tcg	gag	aag	aat	gtg	gtt	aag	atc	tgt	gac	ttc		3344	
Asn	Ile	Leu	Leu	Ser	Glu	Lys	Asn	Val	Val	Lys	Ile	Cys	Asp	Phe			
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ggc	ttg	gcc	cgg	gac	att	tat	aaa	gac	ccg	gat	tat	gtc	aga	aaa		3389	
Gly	Leu	Ala	Arg	Asp	Ile	Tyr	Lys	Asp	Pro	Asp	Tyr	Val	Arg	Lys			
				1050					1055					1060			
gga	gat	gcc	cga	ctc	cct	ttg	aag	tgg	atg	gcc	ccg	gaa	acc	att		3434	
Gly	Asp	Ala	Arg	Leu	Pro	Leu	Lys	Trp	Met	Ala	Pro	Glu	Thr	Ile			
				1065					1070					1075			
ttt	gac	aga	gta	tac	aca	att	cag	agc	gat	gtg	tgg	tct	ttc	ggt		3479	
Phe	Asp	Arg	Val	Tyr	Thr	Ile	Gln	Ser	Asp	Val	Trp	Ser	Phe	Gly			
				1080					1085					1090			
gtg	ttg	ctc	tgg	gaa	ata	ttt	tcc	tta	ggt	gcc	tcc	cca	tac	cct		3524	
Val	Leu	Leu	Trp	Glu	Ile	Phe	Ser	Leu	Gly	Ala	Ser	Pro	Tyr	Pro			

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act aga atg cgg gct Thr Arg Met Arg Ala 1125	cct gac tac act acc Pro Asp Tyr Thr Thr 1130	cca gaa atg tac cag Pro Glu Met Tyr Gln 1135	3614
acc atg ctg gac tgc Thr Met Leu Asp Cys 1140	tgg cat gag gac ccc Trp His Glu Asp Pro 1145	aac cag aga ccc tcg Asn Gln Arg Pro Ser 1150	3659
ttt tca gag ttg gtg Phe Ser Glu Leu Val 1155	gag cat ttg gga aac Glu His Leu Gly Asn 1160	ctc ctg caa gca aat Leu Leu Gln Ala Asn 1165	3704
gcg cag cag gat ggc Ala Gln Gln Asp Gly 1170	aaa gac tat att gtt Lys Asp Tyr Ile Val 1175	ctt cca atg tca gag Leu Pro Met Ser Glu 1180	3749
aca ctg agc atg gaa Thr Leu Ser Met Glu 1185	gag gat tct gga ctc Glu Asp Ser Gly Leu 1190	tcc ctg cct acc tca Ser Leu Pro Thr Ser 1195	3794
cct gtt tcc tgt atg Pro Val Ser Cys Met 1200	gag gaa gag gaa gtg Glu Glu Glu Glu Val 1205	tgc gac ccc aaa ttc Cys Asp Pro Lys Phe 1210	3839
cat tat gac aac aca His Tyr Asp Asn Thr 1215	gca gga atc agt cat Ala Gly Ile Ser His 1220	tat ctc cag aac agt Tyr Leu Gln Asn Ser 1225	3884
aag cga aag agc cgg Lys Arg Lys Ser Arg 1230	cca gtg agt gta aaa Pro Val Ser Val Lys 1235	aca ttt gaa gat atc Thr Phe Glu Asp Ile 1240	3929
cca ttg gag gaa cca Pro Leu Glu Glu Pro 1245	gaa gta aaa gtg atc Glu Val Lys Val Ile 1250	cca gat gac agc cag Pro Asp Asp Ser Gln 1255	3974
aca gac agt ggg atg Thr Asp Ser Gly Met 1260	gtc ctt gca tca gaa Val Leu Ala Ser Glu 1265	gag ctg aaa act ctg Glu Leu Lys Thr Leu 1270	4019
gaa gac agg aac aaa Glu Asp Arg Asn Lys 1275	tta tct cca tct ttt Leu Ser Pro Ser Phe 1280	ggg gga atg atg ccc Gly Gly Met Met Pro 1285	4064
agt aaa agc agg gag Ser Lys Ser Arg Glu 1290	tct gtg gcc tcg gaa Ser Val Ala Ser Glu 1295	ggc tcc aac cag acc Gly Ser Asn Gln Thr 1300	4109
agt ggc tac cag tct Ser Gly Tyr Gln Ser 1305	ggg tat cac tca gat Gly Tyr His Ser Asp 1310	gac aca gac acc acc Asp Thr Asp Thr Thr 1315	4154
gtg tac tcc agc gac Val Tyr Ser Ser Asp 1320	gag gca gga ctt tta Glu Ala Gly Leu Leu 1325	aag atg gtg gat gct Lys Met Val Asp Ala 1330	4199
gca gtt cac gct gac Ala Val His Ala Asp 1335	tca ggg acc aca ctg Ser Gly Thr Thr Leu 1340	agc tca cct cct gtt Ser Ser Pro Pro Val 1345	4244
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Lys Leu Ser Thr Gln Lys Asp Ile Leu Thr Ile Leu Ala Asn Thr Thr  
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Leu Gln Ile Thr Cys Arg Gly Gln Arg Asp Leu Asp Trp Leu Trp Pro  
 50 55 60

Asn Ala Gln Arg Asp Ser Glu Glu Arg Val Leu Val Thr Glu Cys Gly  
 65 70 75 80

Gly Gly Asp Ser Ile Phe Cys Lys Thr Leu Thr Ile Pro Arg Val Val  
 Seite 22



Asn Gly Arg Pro Ile Glu Ser Asn Tyr Thr Met Ile Val Gly Asp Glu  
 370 375 380

Leu Thr Ile Met Glu Val Thr Glu Arg Asp Ala Gly Asn Tyr Thr Val  
 385 390 395 400

Ile Leu Thr Asn Pro Ile Ser Met Glu Lys Gln Ser His Met Val Ser  
 405 410 415

Leu Val Val Asn Val Pro Pro Gln Ile Gly Glu Lys Ala Leu Ile Ser  
 420 425 430

Pro Met Asp Ser Tyr Gln Tyr Gly Thr Met Gln Thr Leu Thr Cys Thr  
 435 440 445

Val Tyr Ala Asn Pro Pro Leu His His Ile Gln Trp Tyr Trp Gln Leu  
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Glu Glu Ala Cys Ser Tyr Arg Pro Gly Gln Thr Ser Pro Tyr Ala Cys  
 465 470 475 480

Lys Glu Trp Arg His Val Glu Asp Phe Gln Gly Gly Asn Lys Ile Glu  
 485 490 495

Val Thr Lys Asn Gln Tyr Ala Leu Ile Glu Gly Lys Asn Lys Thr Val  
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Ser Thr Leu Val Ile Gln Ala Ala Asn Val Ser Ala Leu Tyr Lys Cys  
 515 520 525

Glu Ala Ile Asn Lys Ala Gly Arg Gly Glu Arg Val Ile Ser Phe His  
 530 535 540

Val Ile Arg Gly Pro Glu Ile Thr Val Gln Pro Ala Ala Gln Pro Thr  
 545 550 555 560

Glu Gln Glu Ser Val Ser Leu Leu Cys Thr Ala Asp Arg Asn Thr Phe  
 565 570 575

Glu Asn Leu Thr Trp Tyr Lys Leu Gly Ser Gln Ala Thr Ser Val His  
 580 585 590

Met Gly Glu Ser Leu Thr Pro Val Cys Lys Asn Leu Asp Ala Leu Trp  
 595 600 605

Lys Leu Asn Gly Thr Met Phe Ser Asn Ser Thr Asn Asp Ile Leu Ile  
 610 615 620

Val Ala Phe Gln Asn Ala Ser Leu Gln Asp Gln Gly Asp Tyr Val Cys  
 625 630 635 640



Ser Ala Gln Asp Lys Lys Thr Lys Lys Arg His Cys Leu Val Lys Gln  
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 Leu Ile Ile Leu Glu Arg Met Ala Pro Met Ile Thr Gly Asn Leu Glu  
 660 665 670  
 Asn Gln Thr Thr Thr Ile Gly Glu Thr Ile Glu Val Thr Cys Pro Ala  
 675 680 685  
 Ser Gly Asn Pro Thr Pro His Ile Thr Trp Phe Lys Asp Asn Glu Thr  
 690 695 700  
 Leu Val Glu Asp Ser Gly Ile Val Leu Arg Asp Gly Asn Arg Asn Leu  
 705 710 715 720  
 Thr Ile Arg Arg Val Arg Lys Glu Asp Gly Gly Leu Tyr Thr Cys Gln  
 725 730 735  
 Ala Cys Asn Val Leu Gly Cys Ala Arg Ala Glu Thr Leu Phe Ile Ile  
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 Glu Gly Ala Gln Glu Lys Thr Asn Leu Glu Val Ile Ile Leu Val Gly  
 755 760 765  
 Thr Ala Val Ile Ala Met Phe Phe Trp Leu Leu Leu Val Ile Val Leu  
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 Arg Thr Val Lys Arg Ala Asn Glu Gly Glu Leu Lys Thr Gly Tyr Leu  
 785 790 795 800  
 Ser Ile Val Met Asp Pro Asp Glu Leu Pro Leu Asp Glu Arg Cys Glu  
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 Arg Leu Pro Tyr Asp Ala Ser Lys Trp Glu Phe Pro Arg Asp Arg Leu  
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 Lys Leu Gly Lys Pro Leu Gly Arg Gly Ala Phe Gly Gln Val Ile Glu  
 835 840 845  
 Ala Asp Ala Phe Gly Ile Asp Lys Thr Ala Thr Cys Lys Thr Val Ala  
 850 855 860  
 Val Lys Met Leu Lys Glu Gly Ala Thr His Ser Glu His Arg Ala Leu  
 865 870 875 880  
 Met Ser Glu Leu Lys Ile Leu Ile His Ile Gly His His Leu Asn Val  
 885 890 895  
 Val Asn Leu Leu Gly Ala Cys Thr Lys Pro Gly Gly Pro Leu Met Val  
 900 905 910

Ile Leu Gln Phe Ser Lys Phe Gly Asn Leu Ser Thr Tyr Leu Arg Gly  
915 920 925

Lys Arg Asn Glu Phe Val Pro Tyr Lys Ser Lys Gly Ala Arg Phe Arg  
930 935 940

Gln Gly Lys Asp Tyr Val Gly Glu Leu Ser Val Asp Leu Lys Arg Arg  
945 950 955 960

Leu Asp Ser Ile Thr Ser Ser Gln Ser Ser Ala Ser Ser Gly Phe Val  
965 970 975

Glu Glu Lys Ser Leu Ser Asp Val Glu Glu Glu Glu Ala Ser Glu Glu  
980 985 990

Leu Tyr Lys Asp Phe Leu Thr Leu Glu His Leu Ile Cys Tyr Ser Phe  
995 1000 1005

Gln Val Ala Lys Gly Met Glu Phe Leu Ala Ser Arg Lys Cys Ile  
1010 1015 1020

His Arg Asp Leu Ala Ala Arg Asn Ile Leu Leu Ser Glu Lys Asn  
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Val Val Lys Ile Cys Asp Phe Gly Leu Ala Arg Asp Ile Tyr Lys  
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Asp Pro Asp Tyr Val Arg Lys Gly Asp Ala Arg Leu Pro Leu Lys  
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Trp Met Ala Pro Glu Thr Ile Phe Asp Arg Val Tyr Thr Ile Gln  
1070 1075 1080

Ser Asp Val Trp Ser Phe Gly Val Leu Leu Trp Glu Ile Phe Ser  
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Leu Gly Ala Ser Pro Tyr Pro Gly Val Lys Ile Asp Glu Glu Phe  
1100 1105 1110

Cys Arg Arg Leu Lys Glu Gly Thr Arg Met Arg Ala Pro Asp Tyr  
1115 1120 1125

Thr Thr Pro Glu Met Tyr Gln Thr Met Leu Asp Cys Trp His Glu  
1130 1135 1140

Asp Pro Asn Gln Arg Pro Ser Phe Ser Glu Leu Val Glu His Leu  
1145 1150 1155

Gly Asn Leu Leu Gln Ala Asn Ala Gln Gln Asp Gly Lys Asp Tyr  
1160 1165 1170

Ile Val Leu Pro Met Ser Glu Thr Leu Ser Met Glu Glu Asp Ser

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Gly Leu Ser Leu Pro Thr	Ser Pro Val Ser Cys Met	Glu Glu Glu
1190	1195	1200
Glu Val Cys Asp Pro Lys	Phe His Tyr Asp Asn Thr	Ala Gly Ile
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Ser His Tyr Leu Gln Asn	Ser Lys Arg Lys Ser Arg	Pro Val Ser
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Val Lys Thr Phe Glu Asp	Ile Pro Leu Glu Glu Pro	Glu Val Lys
1235	1240	1245
Val Ile Pro Asp Asp Ser	Gln Thr Asp Ser Gly Met	Val Leu Ala
1250	1255	1260
Ser Glu Glu Leu Lys Thr	Leu Glu Asp Arg Asn Lys	Leu Ser Pro
1265	1270	1275
Ser Phe Gly Gly Met Met	Pro Ser Lys Ser Arg Glu	Ser Val Ala
1280	1285	1290
Ser Glu Gly Ser Asn Gln	Thr Ser Gly Tyr Gln Ser	Gly Tyr His
1295	1300	1305
Ser Asp Asp Thr Asp Thr	Thr Val Tyr Ser Ser Asp	Glu Ala Gly
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Leu Leu Lys Met Val Asp	Ala Ala Val His Ala Asp	Ser Gly Thr
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Lys Phe Gly Asn Leu Ser Thr Tyr Leu Arg Gly Lys Arg Asn Glu Phe
35 40 45

Val Pro Tyr Lys Ser Lys Gly Ala Arg Phe Arg Gln Gly Lys Asp Tyr  
50 55 60

Val Gly Glu Leu Ser Val Asp Leu Lys Arg Arg Leu Asp Ser Ile Thr  
65 70 75 80

Ser Ser Gln Ser Ser Ala Ser Ser Gly Phe Val Glu Glu Lys Ser Leu  
85 90 95

Ser Asp Val Glu Glu Glu Glu Ala Ser Glu Glu Leu Tyr Lys Asp Phe  
100 105 110

Leu Thr Leu Glu His Leu Ile Cys Tyr Ser Phe Gln Val Ala Lys Gly  
115 120 125

Met Glu Phe Leu Ala Ser Arg Lys Cys Ile His Arg Asp Leu Ala Ala  
130 135 140

Arg Asn Ile Leu Leu Ser Glu Lys Asn Val Val Lys Ile Cys Asp Phe  
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Gly Leu Ala Arg Asp Ile Tyr Lys Asp Pro Asp Tyr Val Arg Lys Gly  
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Asp Ala Arg Leu  
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Lys Phe Asp Asn Leu Ser Thr Tyr Leu Arg Ser Lys Arg Asn Glu Phe  
35 40 45

Val Pro Tyr Lys Thr Lys Gly Ala Arg Phe Arg Gln Gly Lys Asp Tyr  
50 55 60

Val Gly Ala Ile Pro Val Asp Leu Lys Arg Arg Leu Asp Ser Ile Thr  
65 70 75 80

Ser Ser Gln Ser Ser Ala Ser Ser Gly Phe Val Glu Glu Lys Ser Leu  
85 90 95

Ser Asp Val Glu Glu Glu Glu Ala Pro Glu Asp Leu Tyr Lys Asp Phe  
100 105 110

Leu Thr Leu Glu His Leu Ile Cys Tyr Ser Phe Gln Val Ala Lys Gly  
115 120 125

Met Glu Phe Leu Ala Ser Arg Lys Cys Ile His Arg Asp Leu Ala Ala  
130 135 140

Arg Asn Ile Leu Leu Ser Glu Lys Asn Val Val Lys Ile Cys Asp Phe  
145 150 155 160

Gly Leu Ala Arg Asp Ile Tyr Lys Asp Pro Asp Tyr Val Arg Lys Gly  
165 170 175

Asp Ala Arg Leu  
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Val Pro Tyr Lys Ser Lys Gly Ala Arg Phe Arg Ser Gly Lys Asp Tyr  
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Val Gly Glu Leu Ser Val Asp Leu Lys Arg Arg Leu Asp Ser Ile Thr  
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Ser Ser Gln Ser Ser Ala Ser Ser Gly Phe Val Glu Glu Lys Ser Leu  
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Ser Asp Val Glu Glu Glu Glu Ala Ser Glu Glu Leu Tyr Lys Asp Phe  
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Met Glu Phe Leu Ala Ser Arg Lys Cys Ile His Arg Asp Leu Ala Ala  
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Arg Asn Ile Leu Leu Ser Glu Lys Asn Val Val Lys Ile Cys Asp Phe  
145 150 155 160

Gly Leu Ala Arg Asp Ile Tyr Lys Asp Pro Asp Tyr Val Arg Lys Gly  
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Asp Ala Arg Leu  
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